СЕКЦІЯ 2
НОВІТНІ МЕТОДИ ОРГАНІЗАЦІЇ ДОРОЖНЬОГО РУХУ

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PRT (PERSONAL RAPID TRANSIT) SIMULATION RESEARCH IN ENERGY CONSUMPTION ANALYSIS

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A methodology for determining the power and traction energy consumption of the vehicle was presented for assumed conditions of travel on road segments. Input values for the calculation of power are variables describing the curvature (or bends radii) of paths of movement between stops and the course of the current speed. Output values are total traction power or traction energy (where „traction" refers to the power or mechanical work of drive forces).

Due to the lack of vehicle prototypes with assumed structure, it was proposed that task solution are determined via simulation. The presented results relate to the calculation of demand for power and energy for planned test section.

A development of nominal model for analysis of vehicle drive properties was presented. In the construction of the simulation model, particular attention has been paid to three issues. First of all, a correct description of design features connected with the lack of so called centring mechanism – and not profiled tyred wheels independently embedded in the axes of the set. Secondly, a proper description of a turning mechanism with the use of a leading rollers system alongside the rail edge. Thirdly, the use of linear motor for the vehicle drive. The simulation model has been developed within MBS environment. For the description of tyred wheels, the library of TNO Delft Tyre has been used.

Results of simulation studies were presented for a vehicle with running-drive system construction, planned for implementation in the city of Rzeszów. The research has been financed within the framework of ECO mobility project

References

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